

### REMARKS

This application has been carefully reviewed in light of the Office Action mailed September 24, 2004. Claims 1, 10 and 14 have been amended. Claims 2-4, 8, 9, 11-13 and 15 have been cancelled. Reconsideration and favorable action in this application is respectfully requested.

Claim 1 has been rejected under the judicially-created doctrine of obviousness—type double patenting as being unpatentable over Claims 1-34 of U.S. Patent No. 6,108,703. Claim 1 has now been amended to include numerous steps which are not found in the '703 Patent, and it is respectfully submitted that Claim 1 clearly distinguishes over the '703 Patent, and is now in condition for allowance. More specifically, Claim 1 has been amended to include the steps of building an index for the default markup language file that includes information about the origin server as well as logging data about the requested default markup language file served to the requesting end-user.

Claim 1 has been rejected under 35 U.S.C. Section 102(e) as being anticipated by *Farber et al.* Claim 1 has now been amended to clearly define over the *Farber et al* reference, and it is respectfully submitted that Claim 1 is now in condition for allowance.

For the Examiner's consideration enclosed is an opinion of the United States Court of Appeals for the Federal Circuit No. 03-1007 relating to the *Farber et al* reference. *Farber et al* does not perform association of the content provider domain with a CDNSP-specific domain during resolution. It is therefore respectfully submitted that Claim 1 as amended, clearly defines over the *Farber et al* reference, and is now in condition for allowance. Claims 5-7, 10 and 14 depending from Claim 1 further define the present invention, and it is respectfully submitted that Claims 5-7, 10 and 14 are also in condition for allowance.

For the foregoing reasons, allowance of Claims 1, 5-7, 10 and 14 pending in this application, is respectfully requested. If the Examiner has any questions regarding this Amendment, the Examiner is requested to telephone the undersigned attorney for applicants.

Respectfully submitted,



---

Martin Korn  
Registration No. 28,317  
(214) 740-8549

Date: December 22, 2004  
LOCKE LIDDELL & SAPP LLP  
2200 Ross Ave., Suite 2200  
Dallas, Texas 75201-6776  
(214) 740-8549 Telephone  
(214) 756-8549 Facsimile

# United States Court of Appeals for the Federal Circuit

03-1007

AKAMAI TECHNOLOGIES, INC.  
and MASSACHUSETTS INSTITUTE OF TECHNOLOGY,

Plaintiffs-Appellees,

v.

CABLE & WIRELESS INTERNET SERVICES, INC.,

Defendant-Appellant,

and

KINETECH, INC.

Defendant.

Mark T. Banner, Banner & Witcoff, Ltd., of Chicago, Illinois, argued for plaintiffs-appellees. With him on the brief were Pamela B. Krupka, of Washington, DC; and Aimee M. Boss, of Chicago, Illinois.

Arthur B. Wineburg, Pillsbury Winthrop LLP, of McLean, Virginia, argued for defendant-appellant. With him on the brief were Susan T. Brown, Daniel E. Yonan, of McLean, Virginia, and Brian J. Beatus, of Palo Alto, California. Of counsel were Brian Siritzky, Pillsbury Winthrop, LLP, of McLean, Virginia; and Eileen M. Herlihy and John T. Bennett, Palmer & Dodge LLP, of Boston, Massachusetts.

Appealed from: United States District Court for the District of Massachusetts

Judge Rya W. Zobel

# United States Court of Appeals for the Federal Circuit



03-1007

AKAMAI TECHNOLOGIES, INC.  
and MASSACHUSETTS INSTITUTE OF TECHNOLOGY,

Plaintiffs-Appellees,

v.

CABLE & WIRELESS INTERNET SERVICES, INC.,

Defendant-Appellant,

and

KINETECH, INC.

Defendant.

---

DECIDED: September 15, 2003

---

Before NEWMAN, GAJARSA, and DYK, Circuit Judges.

Opinion for the court filed by Circuit Judge GAJARSA. Concurring-in-part and dissenting-in-part opinion filed by Circuit Judge NEWMAN.

GAJARSA, Circuit Judge.

Defendant-Appellant, Cable & Wireless Internet Services, Inc. ("C&W"), appeals the orders of the United States District Court for the District of Massachusetts: (1) denying C&W's motion for judgment as a matter of law challenging the jury verdict that claims 1, 3, 5, and 9 of U.S. Patent No. 6,108,703 ("the '703 patent") are valid and infringed; and (2) granting a permanent injunction based upon the jury verdict. Akamai Techs., Inc. v. Cable & Wireless Internet Serv., Inc., No. 00-CV-11851 (D. Mass. May

24 and Aug. 21, 2002). Because claims 1 and 3, properly construed, are anticipated by U.S. Patent No. 6,185,598 ("the '598 patent") and are therefore invalid under 35 U.S.C. § 102, we reverse the district court's denial of C&W's motion for judgment as a matter of law with respect to claims 1 and 3 and vacate that portion of the permanent injunction. We affirm the district court's denial of C&W's motion for judgment as a matter of law with respect to the validity of claims 5 and 9 because those claims, properly construed, are not invalid. We also affirm the district court's denial of C&W's motion for judgment as a matter of law with respect to infringement of claim 9 because substantial evidence supports the jury's verdict of infringement. In view of our holding, we remand to the district court to review the scope of the permanent injunction.

## I. BACKGROUND

The present appeal concerns technology for alleviating Internet congestion. To better understand the present dispute, a general overview of the relevant technology follows. Generally, people share information, i.e., "content," over the Internet through web pages. To look at web pages, a computer user accesses the Internet through a browser, e.g., Microsoft Internet Explorer® or Netscape Navigator®. These browsers display web pages stored on a network of servers commonly referred to as the Internet. To access the web pages, a computer user enters into the browser a web page address, or uniform resource locator ("URL"). The URL is typically a string of characters, e.g., [www.fedcir.gov](http://www.fedcir.gov). This URL has a corresponding unique numerical address, e.g., 156.119.80.10, called an Internet Protocol ("IP") address. When a user enters a URL into the browser, a domain name service ("DNS") searches for the corresponding IP address to properly locate the web page to be displayed. The DNS is administered by a separate network of computers distributed throughout, and connected to, the Internet. These computers are commonly referred to as DNS

servers. In short, a DNS server translates the URL into the proper IP address, thereby informing the user's computer where the host server for the web page [www.fedcir.gov](http://www.fedcir.gov) is located, a process commonly referred to as "resolving." The user's computer then sends the web page request to the host server, or origin server. An origin server is a computer associated with the IP address that receives all web page requests and is responsible for responding to such requests. In the early stages of the Internet, the origin server was also the server that stored the actual web page in its entirety. Thus, in response to a request from a user, the origin server would provide the web page to the user's browser. Internet congestion problems quickly surfaced in this system when numerous requests for the same web page were received by the origin server at the same time.

This problem is exacerbated by the nature of web pages. A typical web page has a Hypertext Markup Language ("HTML") base document, or "container" document, with "embedded objects," such as graphics files, sound files, and text files. Embedded objects are separate digital computer files stored on servers that appear as part of the web page. These embedded objects must be requested from the origin server individually. Thus, each embedded object often has its own URL. To receive the entire web page, including the container document and the embedded objects, the user's web browser must request the web page and each embedded object. Thus, for example, if a particular web page has nine embedded objects, a web browser must make ten requests to receive the entire web page: one for the container document and nine for the embedded objects.

There have been numerous attempts to alleviate Internet congestion, including methods commonly referred to as "caching," "mirroring," and "redirection." "Caching" is a solution that stores web pages at various computers other than the origin server.

When a request is made from a web browser, the cache computers intercept the request, facilitate retrieval of the web page from the origin server, and simultaneously save a copy of the web page on the cache computer. The next time a similar request is made, the cache computer, as opposed to the origin computer, can provide the web page to the user. "Mirroring" is another solution, similar to caching, except that the origin owner, or a third party, provides additional servers throughout the Internet that contain an exact copy of the entire web page located on the origin server. This allows a company, for example, to place servers in Europe to handle European Internet traffic.

"Redirection" is yet another solution in which the origin server, upon a request from a user, redirects the request to another server to handle the request. Redirection also often utilizes a process called "load balancing," or "server selection." Load balancing is often effected through a software package designed to locate the optimum origin servers and alternate servers for the quickest and most efficient delivery and display of the various container documents and embedded objects. Load balancing software locates the optimum server location based on criteria such as distance from the requesting location and congestion or traffic through the various servers.

Load balancing software was also known prior to the '703 patent. For example, Cisco Systems, Inc. marketed and sold a product by the name of "Distributed Director," which included server selection software that located the optimum server to provide requested information. The server selection software could be placed at either the DNS servers or the content provider servers. The Distributed Director product was disclosed in a White Paper dated February 21, 1997 and in U.S. Patent No. 6,178,160 ("the '160 patent"). Both the White Paper and the '160 patent are prior art to the '703 patent. The Distributed Director product, however, utilized this software in conjunction with a mirroring system in which a particular provider's complete web page was

simultaneously stored on a number of servers located in different locations throughout the Internet. Mirroring had many drawbacks, including the need to synchronize continuously the web page on the various servers throughout the network. This added extra expenses and contributed to congestion on the Internet.

Massachusetts Institute of Technology is the assignee of the '703 patent directed to a "global hosting system" and methods for decreasing congestion and delay in accessing web pages on the Internet. Akamai Technologies, Inc. is the exclusive licensee of the '703 patent.<sup>1</sup> The '703 patent was filed on May 19, 1999, and issued on August 22, 2000. The '703 patent discloses and claims web page content delivery systems and methods utilizing separate sets of servers to provide various aspects of a single web page: a set of content provider servers (origin servers), and a set of alternate servers. The origin servers provide the container document, i.e., the standard aspects of a given web page that do not change frequently. The alternate servers provide the often changing embedded objects. The '703 patent also discloses use of a load balancing software package to locate the optimum origin servers and alternate servers for the quickest and most efficient delivery and display of the various container documents and embedded objects.

Independent claim 1, which is representative, reads:

1. A distributed hosting framework operative in a computer network in which users of client machines connect to a content provider server, the framework comprising:

a routine for modifying at least one embedded object URL of a web page to include a hostname pretended to a domain name and path;

a set of content servers, distinct from the content provider server, for hosting at least some of the embedded objects of web pages that are normally hosted by the content provider server;

at least one first level name server that provides a first level domain name service (DNS) resolution; and

---

<sup>1</sup> For purposes of this opinion both plaintiffs are collectively referred to as "Akamai."



at least one second level name server that provides a second level domain name service (DNS) resolution;

wherein in response to requests for the web page, generated by the client machines the web page including the modified embedded object URL is served from the content provider server and the embedded object identified by the modified embedded object URL is served from a given one of the content servers as identified by the first level and second level name servers.

'703 patent, col. 17, ll. 17-37 (emphases added).

C&W is the owner, by assignment, of the '598 patent. The '598 patent is directed to similar systems and methods for increasing the accessibility of web pages on the Internet. The '598 patent was filed on February 10, 1998, and issued on February 6, 2001. Thus the '598 patent is prior art to the '703 patent pursuant to 35 U.S.C. § 102(e).<sup>2</sup> C&W marketed and sold products embodying the '598 patent under the name "Footprint." The relevant difference between the disclosure of the '598 patent and Akamai's preferred embodiment disclosed in the '703 patent is the location of the load balancing software. Akamai's preferred embodiment has the load balancing software installed at the DNS servers, while the '598 patent discloses installation of the load balancing software at the content provider, or origin, servers. The '598 patent does not disclose or fairly suggest that the load balancing software can be placed at the DNS servers. It is now understood that placement of the software at the DNS servers allows for load balancing during the resolving process, resulting in a more efficient system for accessing the proper information from the two server networks. Indeed, C&W later created a new product, "Footprint 2.0," the systems subject to the permanent injunction, in which the load balancing software was installed at the DNS servers as opposed to the content provider servers. Footprint 2.0 replaced C&W's Footprint product.

---

<sup>2</sup> Akamai does not dispute that the '598 patent is "prior art" to the '703 patent for purposes of validity under 35 U.S.C. § 102 or § 103.

On September 13, 2000, Akamai sued C&W seeking an injunction and damages for infringement of the '703 patent. Among other things, Akamai asserted that C&W's Footprint 2.0 content delivery network infringed apparatus claims 1, 3, 5, and 9 and method claims 17, 18, and 22 of the '703 patent.

C&W answered the Complaint alleging that Footprint 2.0 did not infringe the claims of the '703 patent and that the claims of the '703 patent were invalid under 35 U.S.C. §§ 102 and 103(a). In particular, C&W asserted that the '598 patent anticipated the asserted claims and that the asserted claims were obvious in light of the '598 patent in combination with Cisco's Distributed Director product.

The district court conducted a Markman hearing and entered its order construing the disputed terms of the '703 patent (as well as two other patents that are not at issue in this appeal). The district court stated that "[a]t the time of the Markman hearing, the parties . . . did not appear to have a common understanding as to which additional claims were still in dispute. The parties' written and oral presentations offer little assistance in this regard. I therefore limit my ruling to the terms above." Notably, the parties did not appear to dispute the construction of any terms in the "wherein" clause of claim 1.

After a 19-day jury trial, the jury determined that C&W infringed apparatus claims 1, 3, 5, and 9 and method claims 17, 18, and 22. The jury upheld the validity of apparatus claims 1, 3, 5, and 9. The jury invalidated claims 17, 18, and 22 under 35 U.S.C. §§ 102 and 103(a) as either anticipated by the '598 patent or obvious in light of the '598 patent in view of Cisco's Distributed Director product. C&W filed its motion for judgment as a matter of law in February 2002 asserting that claims 1, 3, 5, and 9 were invalid and/or not infringed. The district court denied that motion and permanently enjoined C&W from "making, using, selling, offering for sale, or importing into the

United States the patented inventions claimed in claims 1, 3, 5, and 9 of the '703 patent," in an Order that "extended to Footprint 2.0 service, as configured and described at trial."

C&W appealed the denial of its motion for judgment as a matter of law and the district court's entry of a permanent injunction on the bases that claim 9 was not infringed and that claims 1, 3, 5 and 9 were invalid for anticipation and/or obviousness. C&W did not appeal the infringement of claims 1, 3, and 5. We have jurisdiction over this appeal pursuant to 28 U.S.C. §§ 1292(a), (c)(1), and 1295(a)(1).

## II. DISCUSSION

We review the denial of a motion for judgment as a matter of law following a jury verdict by reapplying the district court's standard of review. Catalina Lighting, Inc. v. Lamps Plus, Inc., 295 F.3d 1277, 1284 (Fed. Cir. 2000); Stryker Corp. v. Davol, Inc., 234 F.3d 1252, 1257 (Fed. Cir. 2000); Tec Air, Inc. v. Denso Mfg., 192 F.3d 1353, 1357 (Fed. Cir. 1999). Thus, we review claim construction, an issue of law, de novo. Sibia Neurosciences, Inc. v. Cadus Pharm. Corp., 225 F.3d 1349, 1354 (Fed. Cir. 2000).

With regard to factual findings, we must presume that the jury resolved all factual disputes in favor of the prevailing party, and we must leave those findings undisturbed as long as they are supported by substantial evidence. Id. A factual finding is supported by substantial evidence if a reasonable jury could have found in favor of the prevailing party in light of the evidence presented at trial. Tec Air, 192 F.3d at 1358. "Substantial evidence is more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." Consol. Edison Co. v. NLRB, 305 U.S. 197, 229 (1938). Thus, substantial evidence review involves an examination of the record as a whole, taking into consideration evidence that both justifies and detracts from the decision of the fact-finder. In re Gartside, 203 F.3d 1305,

1312 (Fed. Cir. 2000); Nat'l Presto Indus., Inc. v. W. Bend Co., 76 F.3d 1185, 1192 (Fed. Cir. 1996) (holding that a jury verdict must be sustained if it is supported by substantial evidence based on a review of the entirety of the record). In reviewing the record, we must draw all reasonable inferences in favor of the prevailing party, and not make credibility determinations or substitute our view of the conflicting evidence for that of the jury. Sibia, 225 F.3d at 1355 (citing Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 1546 (Fed. Cir. 1983)). If, however, after reviewing all of the evidence in a light most favorable to the prevailing party, this court is convinced that a reasonable jury could not have found in that party's favor, we must reverse the denial of a motion for judgment as a matter of law. Id.

#### A. Anticipation

C&W appeals the jury finding that claims 1 and 3 were valid as not anticipated by the disclosure of the '598 patent. The first step in any invalidity analysis is claim construction, an issue of law this court reviews de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). The second step, determining whether a prior art reference discloses each and every limitation of the claim expressly or inherently, Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, 1576-77 (Fed. Cir. 1991), is a factual question reviewed for substantial evidence. Eaton Corp. v. Rockwell Int'l Corp., 323 F.3d 1332, 1343 (Fed. Cir. 2003). This factual question is contingent upon the proper claim construction. Id. at 1344. A claim limitation is inherent in the prior art if it is necessarily present in the prior art, not merely probably or possibly present. Rosco v. Mirror Lite, 304 F.3d 1373, 1380 (Fed. Cir. 2002). "[T]he dispositive question regarding anticipation is whether one skilled in the art would reasonably understand or infer from the prior art reference's teaching that every claim [limitation] was disclosed in that single reference." Dayco Prods., Inc. v. Total Containment, Inc., 329 F.3d 1358, 1368 (Fed. Cir. 2003) (internal quotation marks and alterations omitted).

Through trial and on appeal, the parties have narrowed the disputed issues of validity to a single point of contention—the placement of the load balancing software at either the DNS servers or the origin server. Therefore, our initial focus in the anticipation analysis is on the construction of claims 1 and 3, in particular whether claims 1 and 3 require the presence of load balancing software at the DNS servers. The issue before us is thus a relatively self-contained one. On the one hand, if claims 1 and 3 require load balancing at the DNS servers, the claims are not anticipated. On

the other hand, if the claims do not require this limitation, they are anticipated by the '598 patent. The only disputed limitation of claims 1 and 3 reads:

wherein in response to requests for the web page, generated by the client machines the web page including the modified embedded object URL is served from the content provider server and the embedded object identified by the modified embedded object URL is served from a given one of the content servers as identified by the first level and second level name servers.

'703 patent, col. 17, ll. 31-37 (emphases added).

Claim 3 is dependent upon independent claim 1 and includes the following additional limitation.

3. The hosting framework as described in claim 1 further including a redundant second level name server.

Id., col. 17, ll. 40-41.

Akamai contends that the '598 patent differs from claims 1 and 3 of the '703 patent in the placement of the load balancing software. Indeed, in its brief on appeal, Akamai stated:

The significant difference between the prior art '598 patent and the '703 patent claims on appeal was acknowledged and admitted by everyone throughout the trial. . . . In particular, C&W counsel told the jury the difference involves the fact that selection of the best computer server to deliver the embedded objects of the web page is done in the '598 prior art patent by "software . . . located at the origin server" whereas selection of the best computer server to deliver the content is done in the '703 patent "by software located at the DNS . . . ."

C&W argues that the location of the load balancing software is not a limitation in claims 1 and 3, and in the alternative, that while the '598 patent does not explicitly disclose the placement of load balancing software at the DNS servers, it is nevertheless inherent in the Internet and the '598 patent.

We agree that claims 1 and 3 do not include a load balancing limitation. While the written description unquestionably contemplates the preferred location of the load balancing software, claims 1 and 3 do not expressly require its presence. To support its

reading of independent claim 1, Akamai points only to the term "identifying" in the "wherein" clause of claim 1 which states:

wherein in response to requests for the web page, generated by the client machines the web page including the modified embedded object URL is served from the content provider server and the embedded object identified by the modified embedded object URL is served from a given one of the content servers as identified by the first level and second level name servers.

This language, however, requires only that the embedded object is "identified by the modified embedded object URL" and is "served from a given one of the content servers as identified by the first and second level name servers." The plain meaning of the claim language does not require any load balancing mechanism. Instead, it simply requires the embedded object to be served from "the content servers as identified by the first level and second level name servers." Load balancing, if required at all, could be at either the DNS servers or the content provider server. The ordinary meaning of the term "identifying" in claims 1 and 3 covers standard DNS resolution, without any sort of load balancing. Absent evidence that a "patentee unequivocally imparted a novel meaning to [the] term[]" or expressly relinquished claim scope during prosecution," we give the limitation its full ordinary and customary meaning. Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003); Teleflex, Inc. v. Ficos N. Am. Corp., 299 F.3d 1313, 1325-26 (Fed. Cir. 2002); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366-67 (Fed. Cir. 2002); Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998) ("Absent a special and particular definition created by the patent applicant, terms in a claim are to be given their ordinary and accustomed meaning.").

The only question that remains is whether the written description or the prosecution history unequivocally shows that the inventors imparted a novel meaning to the term "identifying" to include load balancing. Omega Eng'g, 334 F.3d at 1323;

Teleflex, 299 F.3d at 1325-26. The written description does not specifically define the term "identifying." Rather, the discussion with respect to load balancing focuses on the DNS servers as performing "special function[s]," e.g., load balancing functions, without any reference to the term "identifying." See, e.g., '703 patent, col. 9, ll. 31-48. Similarly, the parties have pointed to nothing in the prosecution history with respect to the term "identifying." Akamai's only evidence that supports its special definition of the term "identifying" is the testimony of one of the inventors, Mr. Farber, of the '598 patent. Mr. Farber stated that: "the DNS in our system are a little different because we did the step of identifying . . . which repeater should be used by the browser as part of the, using [sic] the HTTP method instead of the DNS method."<sup>3</sup> This extrinsic evidence is not the unequivocal evidence, Omega Eng'g, 334 F.3d at 1323, indicating the term "identifying" should take anything other than its ordinary and accustomed meaning. While this possibly suggests that the inventors believed the "identifying" step included a load balancing function, "what the patentee subjectively intended his claims to mean is largely irrelevant to the claim's objective meaning and scope." Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379 (Fed. Cir. 2000). It is also not testimony that clearly supports the proposition that the term "identifying" has a special meaning to one of ordinary skill in the art.

Thus claim 1, as properly construed, does not include the limitation of the placement of the load balancing mechanism. The parties agree that the '598 patent discloses all the remaining limitations of claim 1. Because claim 1 does not require exact placement, it is therefore invalid as anticipated by the '598 patent.

Claim 3 similarly does not require placement of the load balancing software at the DNS servers. Claim 3 only includes the additional limitation that the hosting



framework as described in claim 1 further includes "a redundant second level name server." On appeal, Akamai's primary argument echoes that of claim 1, namely that the load balancing software is located at the DNS servers. Akamai's only separate argument with respect to claim 3 is that "[b]ecause [the] '598 patent did not even mention hierarchical DNS (i.e., more than one level), clearly the jury was entitled to reject the notion that [the] '598 [patent] also anticipated claim 3." This additional argument, however, fails to address C&W's contention that hierarchical DNS is inherent in any Internet system. Indeed, C&W proffered documentary evidence and testimony at trial that redundant domain name servers are inherent in any Internet-based application. See Dayco, 329 F.3d at 1369. Akamai points to no evidence whatsoever that contradicts the evidence presented to the jury at trial. Accordingly, we hold that any inference in favor of Akamai relating to the redundant second level server in claim 3 is unsupported by substantial evidence. The addition of a redundant second level DNS server does not save the validity of dependent claim 3. Claim 3 is therefore also invalid under 35 U.S.C. § 102 as anticipated by the '598 patent.<sup>4</sup>

#### B. Obviousness

C&W next claims that it is entitled to judgment as a matter of law that claims 5 and 9 are obvious in light of the '598 patent in combination with Cisco's Distributed

---

the origin servers responsible for providing the HTTP container page.

<sup>4</sup> Judge Newman in her dissent specifically points out that the issue of anticipation is a question of fact. Claim construction, however, is a question of law. Before the factual question of anticipation may be addressed, a court must first properly construe the claims before it. Here, claims 1 and 3 were not properly construed by the district court. Therefore, a necessary first step in this court's anticipation inquiry was to properly construe the claims at issue.

Director product and are therefore invalid.<sup>5</sup> Claims 5 and 9, which are dependent on independent claim 1, include the following additional limitations.

5. The hosting framework as described in claim 1 wherein the second level name server includes a load balancing mechanism that balances loads across a subset of the set of servers.
9. The hosting framework as described in claim 1 wherein the first level name server includes a network map for use in directing a request for the embedded object generated by a client.

We review the ultimate determination of obviousness de novo. Modine Mfg. Co. v. Allen Group, Inc., 917 F.2d 538, 541 (Fed. Cir. 1990). This ultimate determination, however, requires underlying factual findings, which this court reviews to determine whether they are supported by substantial evidence and, if they are, whether those findings support the legal conclusions which necessarily were drawn by the jury in forming its verdict. Id. A claimed invention is unpatentable due to obviousness if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a) (2000). While the ultimate conclusion of obviousness is for the court to decide as a matter of law, several factual inquiries underlie this determination. Graham v. John Deere Co., 383 U.S. 1, 17-18 (1966). These inquiries include the scope and content of the prior art, the level of ordinary skill in the field of the invention, the differences between the claimed invention and the prior art, and any objective evidence of nonobviousness such as long-felt need and commercial success. Id. When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references. In re Geiger, 815 F.2d 686, 688 (Fed. Cir. 1987). Although the suggestion

---

<sup>5</sup> C&W also challenges the validity of claims 1 and 3 under the same obviousness theory. Because we hold that claims 1 and 3 are anticipated by the '598 patent, we need not reach this argument.

to combine references may flow from the nature of the problem, Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573 (Fed. Cir. 1996), the suggestion more often comes from the teachings of the pertinent references, In re Sernaker, 702 F.2d 989, 994 (Fed. Cir. 1983), or from the ordinary knowledge of those skilled in the art that certain references are of special importance in a particular field, Pro-Mold, 75 F.3d at 1573 (citing Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 297 n.24 (Fed. Cir. 1985)). Therefore, "[w]hen determining the patentability of a claimed invention which combines two known elements, 'the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.'" In re Beattie, 974 F.2d 1309, 1311-12 (Fed. Cir. 1992) (quoting Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co., 730 F.2d 1452, 1462 (Fed. Cir. 1984)).

To prevail, C&W must therefore show that no reasonable jury could have found claims 5 and 9 nonobvious in light of the evidence presented. Tec Air, 192 F.3d at 1358. Here, C&W has not met this burden. Namely, we are unable to discern any suggestion or motivation to combine the references as C&W suggests in the record before us. Indeed, when pressed on this issue at oral argument, C&W could point only to Cisco's Distributed Director product, which at best disclosed that load balancing software could be placed at either the DNS servers or the origin servers for a "mirroring" system. In its brief, C&W pointed to the fact that the '598 patent, the '703 patent, and Cisco's Distributed Director product all address the same problem: Internet congestion.

Our review of the evidence presented to the jury does not persuade us that no reasonable jury could have found claims 5 and 9 nonobvious over the prior art, and we decline to disturb the factual findings of the jury. Drawing all factual inferences in favor

of Akamai, we affirm the jury's verdict with respect to the validity of claims 5 and 9 because there was no suggestion or motivation to combine the references.

Additionally, the record contains substantial evidence relating to secondary considerations supporting the jury's verdict. In particular, the record shows that C&W expended significant effort to determine how Akamai's products worked. Once it was determined that Akamai placed the server selection software at the DNS servers, C&W redesigned its Footprint product, abandoning the embodiments in the '598 patent. The new Footprint 2.0 design incorporated Akamai's placement of the load balancing mechanism at the DNS server. This evidence of copying is relevant to an obviousness determination. See Advanced Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1285 (Fed. Cir. 2000); Vandenberg v. Dairy Equip. Co., 740 F.2d 1560, 1567 (Fed. Cir. 1984) ("The copying of an invention may constitute evidence that the invention was not an obvious one. . . . This would be particularly true where the copyist had itself attempted for a substantial length of time to design a similar device, and had failed."). C&W's redesign process was documented in the record in internal emails from C&W engineers discussing Akamai's approach, identifying weaknesses in C&W's approach, and ultimately deciding to switch to the Akamai system.

In sum, C&W has not shown that the jury's conclusion that claims 5 and 9 of the '703 patent are nonobvious under 35 U.S.C. § 103(a) is unsupported by substantial evidence. Accordingly, we hold that claims 5 and 9 of the '703 patent are not obvious in light of the '598 patent in view of Cisco's Distributed Director product, and therefore affirm the district court's ruling denying C&W's motion for judgment as a matter of law and affirm the grant of a permanent injunction against C&W with respect to claims 5 and 9.

### C. Infringement of Claim 9

Having addressed validity of the various claims of the '703 patent, we next turn to the jury's finding of infringement with respect to dependent claim 9. We review the record as a whole to determine whether substantial evidence exists to support the jury's finding that claim 9 is infringed. C&W objects to the jury verdict based on the fact that Dr. Bustavros's expert report was limited to infringement under the doctrine of equivalents. Akamai counters with cites to the testimony of Dr. Bustavros, who testified that C&W's Footprint 2.0 system included a network map routine and therefore infringed claim 9, without any reference to a limitation under the doctrine of equivalents. This dispute appears to be one of interpretation and weight of a witness's testimony—one for the jury to resolve. This court generally does not tread on the jury's role in making these determinations. Thus, we affirm the jury's finding of infringement of claim 9 as supported by substantial evidence, namely Dr. Bustavros's testimony at trial.

### III. CONCLUSION

For the foregoing reasons, we hold that claims 1 and 3 of the '703 patent are anticipated by the '598 patent and are invalid pursuant to 35 U.S.C. § 102. We therefore reverse the district court's denial of C&W's motion for judgment as a matter of law with respect to the validity of claims 1 and 3, and instruct the district court to modify the permanent injunction accordingly. We also affirm the district court's denial of C&W's motion for judgment as a matter of law with respect to claims 5 and 9 and therefore affirm the district court's issuance of the permanent injunction with respect to those claims. We remand to the district court to review and redetermine the scope of the permanent injunction.

AFFIRMED-IN-PART, REVERSED-IN-PART AND REMANDED.

### IV. COSTS

No costs.

United States Court of Appeals for the Federal Circuit



03-1007

AKAMAI TECHNOLOGIES, INC.  
and MASSACHUSETTS INSTITUTE OF TECHNOLOGY,

Plaintiffs-Appellees,

v.

CABLE & WIRELESS INTERNET SERVICES, INC.,

Defendant-Appellant,

and

KINETECH, INC.,

Defendant.

NEWMAN, Circuit Judge, concurring in part, dissenting in part.

I concur in much of the court's decision. However, the court provides no sufficient basis for overturning the findings of the jury and overturning the affirmance by the district court with respect to the question of anticipation of claims 1 and 3.

The issue of anticipation is a question of fact, and the jury verdict that there is not anticipation must be sustained if there is substantial evidence in its support. It is not disputed that the prior art (the defendant's '598 patent) does not disclose and does not embody the DNS lookup of the Akamai '703 patent. There was extensive evidence, presented by both sides, as to the content of the prior art; there was substantial evidence that the prior art's origin server "reflector" is a different structure and method, and that the subject matter of claims 1 and 3 does not read on the prior art. If there

were any question concerning claims 1 and 3, the question would be one of obviousness; not anticipation. The jury verdict that these claims were not anticipated was supported by substantial evidence, with a lengthy and thorough and fully presented trial, and a verdict that could have been reached by a reasonable jury. The criteria of reversal are not met.

Akamai correctly points out that the defendant makes no effort to discuss the support, or lack thereof, for the jury verdict. My colleagues on this panel commit the same error, for the majority opinion says not a word about the evidence at trial, but simply decides the question for itself. Reversal of the judgment rendered on a jury verdict is appropriate only if there is no legally sufficient evidentiary basis for the verdict. See Fed. R. Civ. P. 50(a)(1); Intercity Maintenance Co. v. Local 254, Service Employees International Union, 241 F.3d 82, 86 (1st Cir. 2001); National Presto Industries, Inc. v. West Bend Co., 76 F.3d 1185, 1192 (Fed. Cir. 1996).

The sufficiency of the evidence must be reviewed in the light most favorable to the party that received the verdict, with all reasonable inferences drawn in favor of the verdict. Sheils Title Co. v. Commonwealth Land Title Insurance Co., 184 F.3d 10, 19 (1st. Cir. 1999); Sibia Neurosciences, Inc. v. Cadus Pharmaceutical Corp., 225 F.3d 1349, 1355 (Fed. Cir. 2000). It was not disputed, indeed it was admitted by C&W, that the prior art did not show either the claim 1 limitation that the content server is "distinct from the content provider server" (clause 3 of claim 1) or that "the embedded object identified by the modified embedded object URL is served from a given one of the content servers as identified by the first level and second level name servers" (sixth clause of claim 1). Even C&W's technical expert Dr. Dewar conceded that "the one thing that is not taught explicitly by the '598 patent is the use of DNS." Claim 1's clauses 4 and 5 require "first level" and "second level" "domain name service (DNS) resolution." Although Dr. Dewar went on to express the opinion that these changes would have been obvious, he did not testify that they were present, even inherently, in the '598 reference. The prior art was not shown to suggest or use or contemplate the DNS as used by the MIT inventors.

Claim 1 requires identification of the content server of the distributed hosting framework during the DNS lookup. Witnesses for both sides agreed that this differs from ordinary use in the context of the internet, and that persons experienced in this field would readily so understand. It is seriously incorrect for this court to reconstruct the invention and then to invalidate the claims on its own findings, ignoring the evidence at the trial.<sup>1</sup>

---

<sup>1</sup> The claims were construed by agreement before trial, and the only issues relate to validity and infringement. It is inappropriate to recharacterize the factual question of anticipation as one of claim construction, instead of deciding the appeal on



There was substantial evidence by which the jury could have found that all of the limitations of claims 1 and 3 are not present in the prior art. The acknowledged differences from the prior art render untenable the panel majority's restatement of the issues, as well as their resolution of the factual question of anticipation in order to invalidate the claims.

I respectfully dissent.

---

the basis on which it was tried, and on the appropriate standard for review of jury verdicts.